Metolachlor Application Timing for Summer Grass Management

Trial ID: BD2008 **Location:** Curlewis **Trial Year:** 2020
Investigator: Branko Duric

Objective:	**To evaluate split application timing of metolachlor for extended pre-plant and in-crop grass control**			
Situation:	**Fallow/In-crop**			
Planting Date:	**10/10/2020**			
Crop & Variety:	**Sorghum**			
Application:	**A**	**B**	**C**	**D**
Application Date:	**3/08/2020**	**1/09/2020**	**13/10/2020**	**6/11/2020**
Next Rainfall after Application:	**22mm at 5DAA 6mm at 12DAA**	**0.4mm at 4DAB, 12mm at 9DAB**	**6mm at 6DAC**	**4mm at 0DAD**
Crop Growth Stage at Application:	**Pre-emergent**		**Post sow Pre-emergent**	**2-3 leaf**
Weeds:	**Wild oats and annual ryegrass**			
Weed Stage at Application:	**Pre-emergent**	-	-	-
Nozzles:	**AIXR110015**			
Volume:	**100 L/ha**			
Keywords:	**Wild oats, annual ryegrass, metolachlor**			

This trial was designed to evaluate the impact of sequential applications of metolachlor on key summer grass management e.g. awnless barnyard grass. The aim was to evaluate the use of split application to provide optimal control of summer grass weeds both prior to planting and in-crop. Unfortunately there was no emergence of summer grass weeds prior to the end of December with the only efficacy data generated following August rainfall on a mixed population of non-target winter grass species.

Pest Name				**Mixed Winter Grasses**	
Description				**~90% wild oats, ~10% annual ryegrass**	
Assessment Date				**1/09/2020**	
Assessment Type				**COUNT**	**CONTROL**
Assessment Unit				**/m²**	**%**
Pest Stage Majority				**14**	**14**
Treatment-Evaluation Interval				**29 DAA**	**29 DAA**
Trt No.	**Treatment**	**Product Rate**	**Appln. Code**		
13	Untreated	-	-	2.1-	-
1	Dual Gold	1000ml/ha	A	1.9-	10
2	Dual Gold	1500ml/ha	A	1.9-	7
3	Dual Gold	1000ml/ha	A	2.0-	5
4	Dual Gold	1500ml/ha	A	1.2-	41
17	Valor	280g/ha	A	1.6-	21
			LSD P=	nsd	n/a
			Treatment Prob.(F)=	0.5926	n/a

Means followed by same letter do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P (F) is significant at mean comparison OSL.
nsd = No significant difference

NB * At this assessment, only the Application A treatments had been applied. All other treatments at this timing were untreated and omitted from this table.

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Pest Stage Majority
14 = 4 True leaves, leaf pairs or whorls unfolded

DAA = Days after Application A

Conclusions:

The trial was conducted to evaluate the impact of Dual Gold (metolachlor) in split applications for the control of summer grasses. The project aim was to evaluate whether split applications of Dual Gold could extend the length of effective residual summer grass control, both prior to planting and in-crop compared to a single application at planting. This may assist in providing improved management of glyphosate resistant or tolerant summer grasses in situations where germinations occur in the month(s) prior to planting.

Four application timings were applied. Fallow applications were conducted at the start of August and September (~10 or 6 weeks prior to planting). An application occurred 3 days after planting (mid October) with an in-crop application at ~4 weeks after planting (early November). The final timing was applied when sorghum plants were at the 2 - 3 leaf stage.

A rain event of ~22mm occurred 5 days after Application A (early August). An assessment of total grass weeds was made 29 days after Application A. Wild oats and annual ryegrass were the only species present with wild oats comprising ~ 90% of the population. Neither Dual Gold or Valor have registrations for wild oats control. No treatment providing significant levels of control with weed distribution very patchy across the site and at a level of ~2/m^2 in the untreated. These weeds were controlled with a commercial knockdown spray of glyphosate prior to planting.

Despite a large rainfall event of ~79mm between the 23-25th October, there was no further emergence of grass weeds in this trial with a final inspection conducted in late January, 2021.

No data was generated to compare split applications of metolachlor on key summer grass weeds. Despite good rainfall 5 days after application, neither Dual Gold (metolachlor) or Valor (flumioxazin) showed any residual activity on a patchy grass weed emergence, where wild oats were the dominant species.

Weed Description	
Weed 1:	***Avena sterilis ludoviciana*** **Wild Oats**
Weed 2:	***Lolium rigidum*** **Annual Ryegrass**

Application Description				
	A	**B**	**C**	**D**
Application Date:	**3/08/2020**	**1/09/2020**	**13/10/2020**	**6/11/2020**
Application Start Time:	**9:00 AM**	**9:30 AM**	**8:00 AM**	**7:30 AM**
Application Stop Time:	**10:30 AM**	**10:30 AM**	**9:00 AM**	**9:00 AM**
Application Method:	**Spray**			
Application Timing:	**Pre-Emergent**			
Application Placement:	**Soil**			
Air Temperature, Unit:	**10 C**	**17 C**	**17 C**	**18 C**
% Relative Humidity:	**88%**	**57%**	**73%**	**57%**
Wind Velocity, Unit:	**1.1 m/s**	**2.0 m/s**	**0.5 m/s**	**2.5 m/s**
Wind Direction:	**SW**	**SW**	**S**	**SW**
Dew Presence (Y/N):	**No**			
% Cloud Cover:	**50**	**0**	**10**	**0**

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Crop Stage at Each Application					
	A	B	C	D	
Crop:	Sorghum				
Stage Majority, %:	Pre-plant	Pre-plant	Post sow Pre-emergent	13	90%
Stage Minimum, %:				12	10%

Pest Stage at Each Application				
	A	B	C	D
Weed 1:	Wild Oats			
Stage Majority, %:	Pre-emergent	-	-	-

Application Equipment				
	A	B	C	D
Application Equipment:	Polaris			
Equipment Type:	BOOM			
Operation Pressure, Unit:	300 kPa			
Nozzle Type:	AIXR			
Nozzle Size:	110015			
Nozzle Spacing, Unit:	50 cm			
Boom Length, Unit:	4m			
Boom Height, Unit:	50 cm			
Ground Speed, Unit:	7.2 km/h			
Carrier:	WATER			
Spray Volume, Unit:	100 L/ha			